We claim:

1. A disc replacement device, comprising:

an upper shell;

a lower shell; and

a plurality of compressible pillars each coupled to and connecting the upper and lower shells and comprising a shape memory alloy, wherein at least one of the plurality of pillars is interiorly offset from perimeters of the upper and lower shells.

2. The disc replacement device of claim 1 wherein the plurality pillars each deform under a strain.

3. The disc replacement device of claim 1 wherein the plurality of pillars are each superelastic within a temperature range of a live human body.

4. The disc replacement device of claim 1 wherein the plurality of pillars are each superelastic at a temperature of above about 34°C.

5. The disc replacement device of claim 1 wherein the plurality of pillars each comprise substantially similar shape memory alloys.

6. The disc replacement device of claim 1 wherein a first one of the plurality of pillars comprises a first shape memory alloy and a second one of the plurality of pillars comprises a second shape memory alloy, wherein the first shape memory alloy differs from the second shape memory alloy.

7. The disc replacement device of claim 1 wherein at least one of the plurality of pillars comprises Nitinol.

8. The disc replacement device of claim 1 wherein at least one of the plurality of pillars comprises a copper-based alloy.

9. The disc replacement device of claim 1 wherein the plurality of pillars each comprise a substantially similar shape.

10. The disc replacement device of claim 1 wherein a first one of the plurality of pillars comprises a first shape and a second one of the plurality of pillars comprises a second shape, wherein the first shape differs from the second shape.

11. The disc replacement device of claim 1 wherein at least one of the plurality of pillars comprises a tetrahedron shape.

12. The disc replacement device of claim 1 wherein at least one of the plurality of pillars comprises an hour-glass shape.

13. The disc replacement device of claim 1 wherein at least one of the plurality of pillars comprises a V shape.

14. The disc replacement device of claim 1 wherein at least one of the plurality of pillars comprises a rectangular prism shape.

15. The disc replacement device of claim 1 wherein at least one of the plurality of pillars comprises a pyramid shape.

16. The disc replacement device of claim 1 wherein at least one of the plurality of pillars comprises a cone shape.

17. The disc replacement device of claim 1 wherein at least one of the plurality of pillars comprises an irregular shape.

18. The disc replacement device of claim 1 wherein at least one of the plurality of pillars comprises a substantially polygonal cross-sectional shape.

19. The disc replacement device of claim 1 wherein at least one of the plurality of pillars comprises a fillet adjacent one of the upper and lower shells.

20. The disc replacement device of claim 1 wherein at least one of the plurality of pillars comprises an upper fillet adjacent the upper shell and a lower fillet adjacent the lower shell.

21. The disc replacement device of claim 1 wherein at least one of the plurality of pillars comprises a first cross-sectional area proximate at least one of the upper and lower shells and a second cross-sectional area distal from the upper and lower shells, wherein the first cross-sectional area is substantially greater than the second cross-sectional area.

22. The disc replacement device of claim 1 wherein the plurality of pillars includes eight pillars proximate the perimeters of the upper and lower shells and one pillar interiorly offset from the perimeters of the upper and lower shells.

23. The disc replacement device of claim 1 wherein at least one of the plurality of pillars has a width substantially equivalent to an average thickness of at least one of the upper and lower shells.

24. The disc replacement device of claim 1 wherein at least one of the plurality of pillars has a height-to-width ratio of less than about 5:1, wherein the height is measured between opposing, interior surfaces of the upper and lower shells and the width is a minimum width of the pillar.

25. The disc replacement device of claim 1 wherein at least one of the plurality of pillars has a height-to-width ratio ranging between about 1:1 and about 3:1, wherein the height is measured between opposing, interior surfaces of the upper and lower shells and the width is a minimum width of the pillar.

26. The disc replacement device of claim 1 wherein, in a substantially non-deformed state, exterior surfaces of the upper and lower shells are separated by a distance substantially equivalent to a height of a disk replaced by the disc replacement device.

27. The disc replacement device of claim 1 further comprising one or more fins extending from at least one of the upper and lower shells.

28. The disc replacement device of claim 27 wherein the one or more fins comprise a shape memory alloy.

29. The disc replacement device of claim 28 wherein the one or more fins are originally shaped at a temperature that is within a temperature range of a live human body.

30. The disc replacement device of claim 28 wherein the one or more fins are originally shaped at a temperature that is above about 34 °C.

31. The disc replacement device of claim 28 wherein the one or more fins are oriented at an acute angle relative to one of the upper and lower shells in a non-deformed state.

32. The disc replacement device of claim 28 wherein the one or more fins are substantially perpendicular to one of the upper and lower shells in a non-deformed state.

33. The disc replacement device of claim 28 wherein the one or more fins each include two branches, each branch oriented at an acute angle relative to the other branch and to one of the upper and lower shells in a non-deformed state.

34. The disc replacement device of claim 1 wherein an outer shape of the disc replacement device is substantially cylindrical.

35. The disc replacement device of claim 1 wherein a cross-sectional profile of the disc replacement device is substantially oval-shaped.

36. The disc replacement device of claim 1 wherein a cross-sectional profile of the disc replacement device is substantially circular.

37. A disc replacement device, comprising:

a shell; and

one or more fins located on an outer surface of the shell and comprising a shape memory alloy.

38. The disc replacement device of claim 37 wherein the one or more fins are originally shaped at a temperature that is within a temperature range of a live human body.

39. The disc replacement device of claim 37 wherein the one or more fins are originally shaped at a temperature that is above about 34°C.

40. The disc replacement device of claim 37 wherein the one or more fins comprises a plurality of fins each comprising a substantially similar shape memory alloy.

41. The disc replacement device of claim 37 wherein the one or more fins comprises a plurality of fins, including a first fin comprising a first shape memory alloy and a second fin comprising a second shape memory alloy, wherein the first shape memory alloy differs from the second shape memory alloy.

42. The disc replacement device of claim 37 wherein at least one of the one or more fins comprises Nitinol.

43. The disc replacement device of claim 37 wherein at least one of the one or more fins comprises a copper-based alloy.

44. The disc replacement device of claim 37 wherein a portion of at least one of the one or more fins comprises stainless steel.

45. The disc replacement device of claim 37 wherein the one or more fins comprises a plurality of fins each having a substantially similar shape.

46. The disc replacement device of claim 37 wherein the one or more fins comprises a plurality of fins, including a first fin having a first shape and a second fin having a second shape, wherein the first shape differs from the second shape.

47. The disc replacement device of claim 37 wherein at least one of the one or more fins is oriented at an acute angle relative to the shell outer surface.

48. The disc replacement device of claim 47 wherein the fin oriented at the acute angle is deflectable towards the shell outer surface in response to a load.

49. The disc replacement device of claim 48 wherein the deflectable fin is configured to return towards a pre-deflected orientation in response to exposure to a temperature that is within a temperature range of a live human body.

50. The disc replacement device of claim 37 wherein at least one of the one or more fins comprises:

an anchor portion oriented at a first angle relative to the shell outer surface; and

a tip portion oriented at a second angle relative to the shell outer surface, wherein the first and second angles are substantially different.

51. The disc replacement device of claim 37 wherein at least one of the one or more fins comprises:

an anchor portion comprising a first composition; and

a tip portion comprising a second composition, wherein the first and second compositions are substantially different.

52. The disc replacement device of claim 37 wherein at least one of the one or more fins comprises a Y shape.

53. The disc replacement device of claim 37 wherein at least one of the one or more fins comprises two branches, each branch oriented at an acute angle relative to the other branch and to the shell outer surface.

54. The disc replacement device of claim 37 wherein at least one of the one or more fins is substantially perpendicular to the shell outer surface.

55. The disc replacement device of claim 37 wherein at least one of the one or more fins substantially spans a primary dimension of the shell outer surface.

56. A disc replacement device comprising:

an upper shell;

one or more upper fins extending from an exterior surface of the upper shell, wherein at least one of the one or more upper fins comprises a first shape memory alloy;

a lower shell;

one or more lower fins extending from an exterior surface of the lower shell, wherein at least one of the one or more lower fins comprises a second shape memory alloy; and

one or more pillars connecting the upper shell and the lower shell, wherein at least one of the one or more pillars comprises a third shape memory alloy.

57. The disc replacement device of claim 56 wherein the first shape memory alloy is substantially similar to the second shape memory alloy.

58. The disc replacement device of claim 56 wherein the first shape memory alloy is substantially similar to the third shape memory alloy.

59. The disc replacement device of claim 56 wherein the second shape memory alloy is substantially similar to the third shape memory alloy.

60. A method of manufacturing a disc replacement device, comprising:

providing a shape memory alloy body; and

removing material from the body to form a plurality through-holes through the body, thereby defining, in the body, upper and lower shells and a plurality of integral pillars extending between the upper and lower shells.

61. The method of claim 60 wherein providing a shape memory alloy body includes providing a shape memory body having at least one fin integral to the body and extending from one of the exterior surfaces.

62. The method of claim 60 wherein providing the shape memory alloy body includes:

providing a shape memory alloy ingot; and

removing material from the ingot to form the exterior surfaces.

63. The method of claim 62 wherein removing material to form the exterior surfaces includes removing material to form at least one fin extending from one of the exterior surfaces.

64. The method of claim 60 wherein the plurality of through-holes each have substantially oval cross-sectional profile.

65. The method of claim 60 wherein removing material to form the plurality of through-holes comprises boring into the body.

66. A method of installing a disc replacement device, comprising:

providing a disc replacement device having upper and lower shells and a plurality of compressible pillars extending between the upper and lower shells, the plurality of pillars each comprising a shape memory alloy, at least one of the plurality of pillars interiorly offset from perimeters of the upper and lower shells; and

positioning the disc replacement device between adjacent vertebral bodies.

67. The method of claim 66 further comprising preparing a disc replacement region between the adjacent vertebral bodies prior to positioning the disc replacement device.

68. The method of claim 66 further comprising compacting the disc replacement device prior to positioning the disc replacement device between the adjacent vertebral bodies, wherein compacting the disc replacement device include compressing the pillars.

69. The method of claim 68 wherein compacting the disc replacement device comprises compressing the upper and lower shells towards each other, thereby compressing at least one of the plurality of pillars.

70. The method of claim 68 further comprising maintaining the disc replacement device below a predetermined temperature between compacting and positioning the disc replacement device.

71. The method of claim 68 wherein the disc replacement device includes at least one external fin extending from one of the upper and lower shells and compacting the disc replacement device comprises deflecting the at least one external fin towards one of the upper and lower shells.

72. The method of claim 68 further comprising installing the compacted disc replacement device in an insertion tool employed to position the disc replacement device between the adjacent vertebral bodies.

73. The method of claim 69 further comprising expanding the disc replacement device after positioning between the adjacent vertebral bodies.

74. The method of claim 73 wherein expanding the disc replacement device comprises heating the disc replacement device to at least a predetermined temperature.

75. The method of claim 74 wherein the predetermined temperature is within a temperature range of a live human body.